



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#4/Election  
5-10-92  
GJ

In re Application of

THOMAS G. LANG

Serial No. 09/852,616

Art Unit: 3617

Filed: May 11, 2001

Examiner: A. Vasudeva

For: LOW-DRAG HYDRODYNAMIC SURFACES

RESPONSE

**RECEIVED**

MAY 10 2002

**GROUP 3600**

To the Commissioner of Patents and Trademarks

Sir:

In response to the office action dated April 12, 2002, the applicant provisionally elects claims of Group I and the Species I and traverses the requirement for restriction.

The inventions as described in the claims are neither independent nor distinct. In fact, the inventions as claimed arise from the same inventive effort. Where inventions are neither independent nor distinct, restrictions should not be required. Where inventions arise from the same inventive effort, restriction should not be required.

MPEP 802.01 points out that a sub-combination and a combination are not independent inventions, and that a process and an apparatus used in the practice of the process are not independent inventions. That same section points out that independent means that there is no disclosed relationship between the subjects disclosed.

The examiner has not made any requirement based on the subject matter being independent. Therefore it is understood that the examiner concedes that the subject matter is not independent.

The examiner's requirement for restriction is based upon his holding that the subjects are distinct. That is, as pointed out in Section 802.01, the examiner has held that the subject matter as claimed:

are capable of separate manufacture, use or sale as claimed,  
AND ARE PATENTABLE (novel and unobvious) OVER EACH OTHER.

The examiner has held under Section 803 that the claimed inventions:

are able to support separate patents and they are ...  
distinct (MPEP Section 806.05-806.05(i)).

However, Section 803 unequivocally states:

If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to distinct or independent inventions.

So that Section 803 makes its point clearly, the serious burden requirement is repeated under the title:

#### CRITERIA FOR RESTRICTION BETWEEN PATENTABLY DISTINCT INVENTIONS

Section 803 goes on to state that there are two criteria for a restriction requirement: one, that the inventions must be distinct as claimed; and two, that there must be a serious burden on the examiner if restriction were not required.

Section 803 goes on to state, under GUIDELINES, that an examiner must provide reasons and/or examples to support

conclusions. The examiner has never stated that there would be a serious burden on the examiner if restriction were not required. Indeed, there should be no serious burden on the examiner. The examiner in this case is well skilled in examining ships in Class 114 and particularly hydrofoils in the Subclass 274 and ported struts or foils in Subclass 278, which is indented under Subclass 274.

No claim is drawn to ship building, and therefore it is believed that no difficult search is required in Subclass 67A.

The subclasses the examiner has cited are all close together and are all within the subclasses assigned to Art Unit 3617 which the examiner regularly searches, and all require searching and indeed are indented under each other in the classic outline form. Indeed, it would not be unreasonable for the examiner to search three subclasses that were close together and indented.

Therefore restriction should not be required.

The applicant notes that the examiner has noted that Group II claims should be examined in Subclass 67 of Class 114, but that subclass is indented under the Shipbuilding Subclass 65.

To the extent that 67A is an appropriate classification for the process claims, it is also an appropriate classification for the remainder of the claims, since all of the claims describe gas films and 67A is the only subclass in Class 114 that specifically indicates air films.

With regard to the examiner's specific points, in the following paragraphs it can be seen that restriction is not proper.

2. Groups I and II inventions are not distinct. Claim 153, for example, is substantially similar to Claim 62. Both groups result from the single inventive effort. Claim 79, for example, sets forth the specifics of the sub-combination of the hydrofoil as defined in claim 1. The combination as claimed in claim 1 sets forth the details of the sub-combination. The two-way distinctiveness required by 806.05(c) cannot be established. The combination as claimed in claim 1 requires the sub-combination as claimed. There is no separate classification, status or field of search as required by 806.05(c), because subclass 274, which is noted by the examiner for Group I, is simply a similar subclass of subclass 67A, which is noted by the examiner for Group II. Both subclasses would have to be examined in both cases.
3. The inventions of Groups I and II and Species I-XI, V, VI and VII are related because they all require the structure of Figures 1-5, and they all use the hydrofoils of Species II-V.

The inventions of Groups I and II and Species I-XI are not different combinations in that they do not have "different modes of operation" as required by 806.04. Moreover, where inventions are related as disclosed but are not distinct as claimed, restriction is never proper (MPEP 806). The

inventions are not distinct as claimed because each invention requires the low pressure gas releasing nose pieces as claimed. Moreover, there is no serious burden on the examiner because Subclasses 274 and 67A are both subclasses under Class 114, and both inventions I and II should be classified together in the same single subclass, 274, and all of the inventions as claimed should be checked in Subclass 67A, air films.

4. MPEP 806 provides that if the inventions are not distinct as claimed, restriction is never proper.

The hydrofoil craft as claimed in Group I claims is not distinct from the body as claimed in the Group II claims. For example, the hydrofoil craft as claimed in claim 1 (Group I) is not distinct from the body as claimed in claim 79 or the underwater surface method as claimed in claim 143 (Group II). The examiner's examples do not take into account the claims in which the apparatus as claimed cannot be used on a sensor, torpedoes, submarines, personal watercraft or motorized surfboards. The examiner's example is not correct. Moreover, Section 806.05(h) emphasizes "as claimed" and falls under the cautions of 806 and 806.05, both of which state, "where the inventions are related as disclosed but are not distinct as claimed, restriction is never proper". In the present case the particular criteria and guidelines of 803 must be followed in that there must be a serious burden on the examiner if restriction were not

required. In the present case, all of the groups must be searched in all of the subclasses which the examiner has pointed out. All are properly classified and searched together, and the search for one group would not be complete without searching all of the subclasses that the examiner has pointed out.

Patent and Trademark Office records indicate that the number of patents in the classes noted by the examiner is not excessive and would not suggest a hardship. For example, the numbers of patents in those subclasses since records are available indicates that only 253 patents have been issued in subclass 274, and fewer than 500 patents have been issued in subclass 67A. Both of those subclasses should be searched in any case. It is believed that the experienced examiner in this application is familiar with all of these subclasses. There should be no hardship on the examiner to complete examination for all groups.

The examiner's proposed Group I utilized closed cavities to reduce drag on underwater surfaces, and Group II utilizes both closed and open cavities to reduce drag. The two groups are related because they both reduce drag by using gas cavities.

Group I requires Group II to reduce drag in situations where Group I cannot reduce drag by itself. An example is a hydrofoil with closed cavities (Group I) that cannot reduce drag with closed cavities if it pierced the water surface; the reason is that the closed cavities would turn into open cavities. However, if Group II elements were added, including a fence, then

hydrofoil drag could be reduced by using closed cavities, in the region below the fence.

No examples are known where the Group II claims were applied to a towed body, torpedo, submarine, personal watercraft or motorized surfboard. No useful way to reduce drag on these bodies by using the Group II claims is known.

No Group I claims are patentable. Group II claims must be patentable, and vice versa.

Each claim is patently distinct from all other claims.

Claims 1-174 read upon the provisionally elected species.

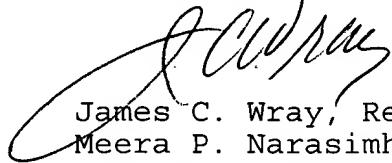
The applicant requests reconsideration. Claims 1, 62, 74, 101, 118, 125, 143, 152, 175, 182, 192, 193, 202, 204, 214 and 217 are allowable linking claims which link the hydrofoil craft hull and the hydrofoil. All describe the hydrofoil structure of Group I. All define the antifriction surfaces of elongated bodies (the hydrofoils) in many ways, which is encouraged by the Patent Law, Rules and established procedure. It is proposed that all claims be considered and allowed.

Alternatively, it is requested that the examiner consider claims to the hydrofoil craft of Figures 1-5 and 35-41 and their hydrofoils shown in Figures 6-22 and 24-27. Claims directed to those figures are claims 1-178. Claims 79-100, which define the hydrofoils as bodies; claims 105-124, claims 125-142 and 143-151, which define the hydrofoils as underwater bodies; and claims 152-220 as continuous underwater surfaces.

"Bodies" in Group II claims is intended to describe hydrofoils and hydrofoil shaped struts, which are hydrofoils. If the examiner's work will be facilitated by substituting "hydrofoil" for "body" throughout the Group II claims, such a change would be acceptable to the applicant.

Reconsideration and allowance of the application are requested. Reconsideration and withdrawal of the restriction requirement are requested.

Respectfully,



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Enclosure: First two pages of Class 114, with numbers of patents issued since 1976 noted by the examiners selected subclasses.

## CLASS 114 SHIPS

DECEMBER 1998

	MOTHER SHIP, FLOATING LANDING PLATFORM, AND HARBOR	58	.Paddle wheelers
263	.Floating boat dock	59	.Spindle
44	VESSEL RAISING AND DOCKING	60	.Canal and ferry boats
45	.Floating dry docks	61.1	.Multiple hulls
46	..Sectional	61.11	..With capsize prevention or uprighting means
47	..End gates	61.12	..Including a submerged hull (e.g., semisubmerged watercraft)
48	..Elevators	61.13	...Vertically spaced from another submerged or semisubmerged hull
49	.Camels, caissons, and pontoons	61.14	...Having plural spaced struts connecting each submerged hull and platform
50	.Submerged	61.15	..With connecting means permitting relative movement between hulls
51	..Hoisting	61.16	...Connecting means is pivotable arm
52	..Air tanks	61.17	....Arm pivots about a vertical axis
53	...Camels, caissons, and pontoons	61.18	...Connecting means permits transverse linear horizontal movement of hulls toward each other
54	...Inflatable bags	61.19	...Hull pivots about a vertical axis
55	..Sand and mud loosening	61.2	..Having a specifically defined hull shape
55.5	MOTORIZED SELF-PROPELLED WATERSKI OR WATERSCOOTER-TYPE VEHICLE (E.G., PERSONAL WATERCRAFT)	61.21	...Having lower hull portion asymmetrical with respect to a central vertical plane through that particular hull
55.51	.Having hull compartment drain or vent	61.22	..Having plural crossbeams supporting rigid deck means
55.52	.Having pivoted steering and towing mast for rider	61.23	..Trampoline-type deck means
55.53	.Having releasable hull compartment cover	61.24	..Having seat
55.54	.With ski, pontoon, or hydrofoil providing vertical lift	61.25	..Inflatable-type hull
55.55	..And rider straddles seat	61.26	.Having specific dimensional or speed ratio (e.g., Froude number)
55.56	.Having standing rider	61.27	.Having specific forebody
55.57	.Having rider straddling seat	61.28	..Including bulb
55.58	.Rider is prone or supine	61.29	..And specific aftbody
271	HULL OR HULL ADJUNCT EMPLOYING FLUID DYNAMIC FORCES TO DERIVE A LIFT OR ALTER TRIM, E.G., PLANING HULLS	61.3	...And specific midbody (e.g., waist)
272	.Having airfoil	61.31	.Having specific midbody (e.g., waist)
273	..Movably mounted	61.32	.Having specific bottom
274	.Having hydrofoil	61.33	..V-shaped bottom
275	..With control means responsive to sensed condition	62	..Concave bottom
276	...Having feeler means	63	..Flat bottom
277	...Having liquid pressure sensor	343	BOATS, BOAT COMPONENT OR ATTACHMENT
278	..Ported strut or foil	344	.With wheeled buoyant landing or launching aid
279	..With shock damping means	345	.Inflatable
280	..Having means to tilt or reposition foil or foil adjunct	346	.Circular
281	...Steerable foil	347	.Canoe or kayak
282	...Having means to move foil to a retracted nonuse position	348	.Lifeboat
283	.Having laterally disposed skids or pontoons	349	..Enclosed
284	Movably mounted hull portion or hull adjunct	350	...With self-leveling passenger compartment
285	..Trim tab or hull plate	351	.Hunting
286	...With fluid motor	352	.Sectional
287	....Expanding bladder	353	..With folding
288	.Having fluid channeling or entrapping configuration	354	.Collapsible
289	..With fluid introducing means	355	.Hull construction
290	..Plural channels	356	..Metal
291	.Stepped hull	357	..Plastic
292	.Pontoon structure	358	..Wood
56.1	DISPLACEMENT-TYPE HULL (e.g., specific aftbody)	359	..Former and framer
57	.Screw propeller type		

## CLASS 114 SHIPS

DECEMBER 1998

	BOATS, BOAT COMPONENT OR ATTACHMENT	102.19	...And traveler
360	.With means to prevent capsizing or sinking	102.2	...And winch (e.g., capstan, driven pulley, windlass, etc.)
361	.Protective cover or shield	102.21	...And sheave or pulley
362	.Boarding aids	102.22	.Having means to vary shape of sail (e.g., camber)
363	.Seat and foot support	102.23	.Inflatable type
364	.Deck or gunwale attachment	102.24	..Batten
65 R	BUILDING	102.25	...Having separate adjustment means for batten
66	.Observation boats	102.26	....For plural battens in a horizontal plane
67 R	.Antifriction surfaces	102.27	...Having specific construction
67 A	..Air and oil films	102.28	.Spinnaker pole
68	.Insubmergible vessels	102.29	.Specific sail structure or arrangement
69	..Linings and fillings	102.3	..Spinnaker
70	.Canal and ferry boats	102.31	..Of laminate or composite construction
71	.Cabins	102.32	..Constructed from a plurality of connected panels moveable relative to each other
72	.Freighters	102.33	..Constructed from a plurality of edge connected panels
73	..Bulk cargo	104	.Reefing and furling
74 R	...Liquid	105	..Fore-and-aft sails
74 T	....Floating tank	106	...Rolling
74 A	....Double hull or insulated tank	107	..Rolling
75	...Antishifting devices	108	.Fastening device for sail
76	...Ceilings and floors	109	.Rigging screws and stretchers
77 R	.Sectional	111	.Running rigging
77 A	..Horizontal sections	112	.Mast travelers
78	.Bulkhead and compartment	113	.Hoops and connections
79 R	.Iron	114	.Cringles and hanks
80	..Corrugated	115	.Clews
81	..Tubular	116	BULKHEADS AND DOORS
79 W	..Welded joint	117	.Doors
82	.Wood	118	..Automatic
83	.Bracing and staying	119	...Sliding
84	.Sheathing and planking	120	..Sliding
85	.Decks	121	BALLASTING
86	.Calking and seaming	122	.Antirolling
87	.Knees	123	.Floats
88	.Joints	124	.Shifting weights
65 A	.Concrete ships	125	.Water tanks
89	SPARS	126	.Fins and boards
90	.Masts and masting	127	CENTERBOARDS
91	..Swinging	128	.Steering
92	..Cross and trestle trees	129	.Multiple
93	..Coats, shields, and steps	130	.Vertical drop and pivoted swing
94	..Heads and irons	131	..Sectional
95	.Yards	132	.Pivoted
96	..Trusses and parrels	133	..Sectional
97	.Gaffs, booms, etc.	134	...Fan
98	..Pivoted	135	..Lateral
99	..Crotches and supports	136	..Lateral swing
100	.Spar irons	137	..Lateral tilt
101	.Fair leaders and chocks	138	.Vertical drop
102.1	SAIL OR CONTROL MEANS THEREFOR	139	..Sectional
102.11	.Sail assembly freely held by rider	140	KEELS
102.12	.Having means to tension or stretch sail	141	.Vertical adjustment
102.13	.Having airflow control device for sail	142	.Bilge
102.14	..Fairing	143	.Rocking
102.15	.Having means to stow, load, or unload sail		
102.16	.Including means to orient sail		
102.17	..Having gearing		
102.18	..Having rope or line (e.g., sheet)		